

Serial No. 10/800,854

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REMARKS

This Amendment is responsive to the non-final Office Action¹ of March 16, 2006. Claims 1-44 were presented for examination and were rejected. No claims are added or canceled. Claim 17 is amended to improve antecedent basis. Claims 36, 39 and 40 are amended to correct typographical errors. No new matter is added. Claims 1, 17, 31 and 43 are independent claims. Claims 1-44 are pending.

Claims 1-44 were rejected under 35 U.S.C. §103(a) as being un-patentable over either one of Bandyopadhyay et al. ("An Adaptive MAC Protocol for Wireless Ad Hoc Community Network (WACNet) Using Electronically Steerable Passive Array Radiator Antenna" and known hereinafter as "Bandy") or Singh et al. ("A MAC Protocol Based on Adaptive Beamforming for Ad Hoc Networks" and known hereinafter as "Singh"), in view of Crilly, Jr. et al. (6,611,231 and known hereinafter as "Crilly"), Speight (6,246,366, and known hereinafter as "Speight"), and Velazquez et al. (2001/0003443 and known hereinafter as "Velazquez"). Applicant respectfully traverses these rejections for the following reasons.

For example, consider claim 1 which is rejected under 35 U.S.C. §103(a) as being un-patentable over either Bandy or Singh, in view of Crilly, Speight and Velazquez:

¹ The Office Action may contain a number of statements characterizing the cited references and/or the claims which Applicant may not expressly identify herein. Regardless of whether or not any such statement is identified herein, Applicant does not automatically subscribe to, or acquiesce in, any such statement. Further, silence with regard to rejection of a dependent claim, when such claim depends, directly or indirectly, from an independent claim which Applicant deems allowable for reasons provided herein, is not acquiescence to such rejection of that dependent claim, but is recognition by Applicant that such previously lodged rejection is moot based on remarks and/or amendments presented herein relative to that independent claim.

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A method for dynamically adjusting a beam of an adaptive antenna array, the method comprising: receiving in a receiving node, via a plurality of antenna array elements, a signal from a transmitting node; digitizing the received signal from the antenna array elements; recording the digitized received signal; generating $k+1$ output signals from the recorded digitized signal, by applying each of a plurality of weight sets to the digitized signal, each of the weight sets corresponding to a different one of k known neighboring nodes and a weight set for generating an omnidirectional propagation pattern; determining which one of the $k+1$ output signals to process; and processing the one of the $k+1$ output signals and decoding a packet encoded in the one of the $k+1$ output signals.

(Emphasis added.) Claim 1 clearly calls for *"generating $k+1$ output signals from the recorded digitized signal, by applying each of a plurality of weight sets to the digitized signal, each of the weight sets corresponding to a different one of k known neighboring nodes and a weight set for generating an omnidirectional propagation pattern"*

(emphasis added) and Applicant submits that this limitation is not disclosed or suggested in any of the references.

To begin with, the Office Action admits (page 3, paragraph #8) that Bandy and/or Singh do not teach at least this limitation.

Crilly, which is directed to: "Wireless Packet Switched Communication Systems and Networks Using Adaptively Steered Antenna Arrays" (Title) refers to weights and weighting in its specification only in column 2, lines 30-65; column 7, lines 29-30; column 8, lines 33-60; column 9, lines 36-46; column 12, lines 20-58; column 13, line 5; column 19, lines 32-35; column 22, lines 55-67; column 24, line 2; column 26, lines 15-33; and column 27, line 5. Applicant has carefully reviewed at least these sections of Crilly which leads Applicant to conclude that the above-highlighted limitation of claim 1 is not disclosed or suggested in any one or more of these sections. If this rejection is

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maintained in the next office action, the Examiner is respectfully requested to point to specific language in Crilly which allegedly reads on Applicant's "generating" step.

Speight, which is directed to "Direction Determination in Cellular Mobile Communications Network" (Title) makes reference to the subject of weights and weighting only in the following section:

The space processing may be achieved by **weighting the signals** received by each antenna and summing the **weighted signals**. The space processor may be physical or simulated by one or more data processors. The processing is carried out faster than real time in either case so that all the different directions are processed in one frame.

Whether the space processor is physical or virtual, in each branch 10 the **signal is weighted by individual complex weights 12**. The **weighted signals branch signals** are summed in a summer 16. The **weights are to have equal magnitude but differing phases** so as to scan the major lobe through 120.degree. from -60.degree. to +60.degree..

(Column 2, lines 38-50, Emphasis added.) There is no other reference to weights or weighting functions in Speight, and the above highlighted references to weighting clearly do not disclose the above highlighted specific claim limitation of claim 1. If this rejection is maintained in the next office action, the Examiner is respectfully requested to point to specific language in Speight which allegedly reads on Applicant's "generating" step.

Velasquez, which is directed to: "Communication System Using Geographic Position Data" (Title) refers to weights and weighting in its specification only in the following paragraphs: [0044], [0045], [0060], [0061], [0064], [0065], [0070], [0074], [0075], [0081], [0084], [0085], [0086], [0087], [0088], [0095]. Applicant has carefully reviewed at least these paragraphs, which again leads Applicant to conclude that the above-highlighted limitation of claim 1 is not disclosed or suggested in any one or more

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of these paragraphs. If this rejection is maintained in the next office action, the Examiner is respectfully requested to point to specific language in Velasquez which allegedly reads on Applicant's "generating" step.

Furthermore, without acquiescing in the combinability of these three references, assuming, arguendo, that they are combinable, the combination of the three references still does not disclose or suggest the above-highlighted limitation of claim 1.

In addition to not disclosing or suggesting Applicant's claimed "generating" step, since "k+1" output signals, as defined by Applicant, are not disclosed or suggested by any one, or the combination, of the applied references, then the recited "determining" step and the recited "processing" step, both of which recite "k+1" output signals are also not disclosed or suggested by the applied references.

Applicant does not attempt to refute that Crilly, Speight and Velazquez discuss weighting. However, Applicant is not merely claiming "weighting" per se, where a disclosure of weighting in these references might then arguably read on that function. Rather, Applicant is reciting a specific generation of output signals as a function of weight sets. Each of the weight sets corresponds to a different one of the known neighboring nodes. The output signals are specifically k+1 in number, where k represents the number of known neighboring nodes. The "extra" output signal is also a function of a weight set used for generating an omnidirectional propagation pattern. Then, one of the output signals is determined for processing along with decoding a packet encoded in the processed output signal. This is not discernable in, or from, any of the

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“weighting-related” sections which Applicant has identified above or from elsewhere in the references.

In accordance with MPEP 2143, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants’ disclosure. And, all three of these basic criteria must be met - if any one is not met the prima facie case of obviousness is not made.

In this instance the prior art references when combined do not teach or suggest all the claim limitations, thereby mooting any need to discuss the first two criteria for establishing a prima facie case of obviousness.² For reasons given above, the combined references do not teach at least “generating $k+1$ output signals from the recorded digitized signal, by applying each of a plurality of weight sets to the digitized signal, each of the weight sets corresponding to a different one of k known neighboring nodes and a weight set for generating an omnidirectional propagation pattern” as recited in claim 1.

² Applicant does not acquiesce in these other two criteria and reserves its rights to present arguments in rebuttal in future responses.

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Therefore, the 35 U.S.C. §103(a) rejection of claim 1 should be withdrawn and the claim allowed.

Independent claims 17, 31 and 43 each contains a similar limitation to that recited above in claim 1. Claim 17 recites, *interalia*, "generate $k+1$ output signals based on the stored portions of the received signal, wherein each of the output signals is generated using a different one of a plurality of weight sets, the weight sets corresponding to k known neighboring nodes and a weight set for generating an omnidirectional propagation pattern." Claim 31 recites, *interalia*, "apply each of $k+1$ weight sets to the recorded waveforms to generate $k+1$ output signals, k of the weight sets corresponding to k known neighboring nodes and one of the weight sets being a predetermined weight set for generating an omnidirectional propagation pattern." Claim 43 recites, *interalia*, "means for generating a plurality of output signals by applying each of a plurality of weight sets to the representation of the received signal, k of the weight sets corresponding to k known neighboring nodes and one of the weight sets being a predetermined weight set for propagating an omnidirectional pattern." Therefore, for reasons similar to those given above with respect to claim 1, the 35 U.S.C. §103(a) rejection of claims 17, 31 and 43 should be withdrawn and the claims allowed.

Claims 2-16, dependent, directly or indirectly, from claim 1, are allowable, at least for reasons based on their respective dependencies from allowable claim 1. Claims 18-30, dependent, directly or indirectly, from claim 17, are allowable, at least for reasons based on their respective dependencies from allowable claim 17. Claims 32-42, dependent, directly or indirectly, from claim 31, are allowable, at least for reasons based

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on their respective dependencies from allowable claim 31. Claim 44, dependent from claim 43, is allowable at least for reasons based on its dependency from allowable claim 44.

Furthermore, dependent claims are deemed allowable for reasons based on their own individual recitations. Applicant notes that at the end of paragraph 9 on page 3 in the Office Action, that the Examiner takes a position that "the further dependent claims are deemed to be shown and/or obvious to the skilled artisan in the design of an ad hoc wireless communication network using an adaptive antenna array with digital beamforming." This "official notice" position is taken with respect to unidentified claims. Accordingly, Applicant respectfully requests that any succeeding office action be more specific and identify the dependent claims which are being rejected by official notice. Further, Applicant seasonably requests support for the taking of Official Notice, as provided by 37 CFR 1.104(d)(2) and MPEP § 2144.04. If documentary evidence of such Official Notice is not provided in the next Office Action, Applicant respectfully submits that the rejection of these unidentified claims should be withdrawn.

Moreover, the Office Action has not applied any sections of any of the references against any of the elements of any of the claims! Applicant respectfully requests that, if a notice of allowance is not forthcoming in response to this amendment, that the Examiner please apply these or other references with more specificity against each of the elements of the pending claims.

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CONCLUSION

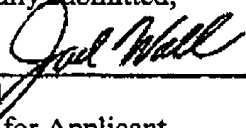
Reconsideration and allowance are respectfully requested based on the above amendments and remarks. It is respectfully submitted that all claims and, therefore, this application are in condition for allowance.

If there are any remaining issues or if the Examiner believes that a telephone conversation with Applicant's attorney would be helpful in expediting the prosecution of this application, the Examiner is invited to call the undersigned at (972) 718-4800.

To the extent necessary, a petition for extension of time under 37 C.F.R. § 1.136 is hereby made, the fee for which should be charged to deposit account number 07-2347. Please charge any other fees due, or credit any overpayment made to that account.

Respectfully submitted,

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